



April 24, 2014

JN 139517

Mr. Marc Cass

**COUNTY OF SAN DIEGO
DEPARTMENT OF GENERAL SERVICES**

5560 Overland Avenue, Suite 410
San Diego, CA 92123

Subject: Imperial Beach Library Parking and Traffic Study

Dear Mr. Cass:

RBF Consulting (RBF) has conducted a parking demand and traffic study for the Imperial Beach Branch Library in the City of Imperial Beach. In addition, RBF has evaluated parking and traffic impacts associated with the proposed library expansion. The existing Imperial Beach Branch Library is located on the northeast corner of Imperial Beach Boulevard and 8th Street, across from the Civic Center. The proposed expansion would occur on the existing library site. **Exhibit 1** illustrates the project study area. This letter summarizes the results of the analysis.

Project Description

The library project would expand the existing 5,000 square foot facility up to a maximum of 12,000 square feet. The existing 2,000 square-foot Marina Vista Room, a City of Imperial Beach community facility, will be integrated into the overall library expansion project. The library expansion project will result in the removal of the existing 11-stall parking lot on the north side of the library building.

Existing Library Conditions

The library is currently open Monday through Saturday and closed on Sundays:

- ❖ Mondays & Wednesdays: 9:30 a.m. to 8:00 p.m.
- ❖ Tuesdays & Thursdays: 9:30 a.m. to 6:00 p.m.
- ❖ Fridays & Saturdays: 9:30 a.m. to 5:00 p.m.
- ❖ Sundays: Closed

Currently, 10 parking spaces and one (1) handicap parking space are provided in the library parking lot located on the north side of the library building. Driveway access to the existing parking lot is provided from 8th Street approximately 120 feet north of Imperial Beach Boulevard. On-street parking is provided to the public along 8th Street.

PLANNING ■ DESIGN ■ CONSTRUCTION

5050 Avenida Encinas, Suite 260, Carlsbad, California 92008 ■ 760.476.9193 ■ FAX 760.476.9198

Offices located throughout California, Arizona & Nevada ■ www.RBF.com

Approximately 15 on-street parallel parking spaces are provided on the west side of 8th Street, and 3 parallel spaces are provided immediately adjacent to the library on the east side of the street. An additional 30 angled parking spaces are provided on the east side of 8th Street fronting Veterans Park. **Exhibit 2** illustrates the existing on-site library parking and on-street parking along 8th Street.

Existing Traffic Conditions

RBF conducted a field assessment of the roadway network to determine the functional classifications of the surrounding roadway network, including Imperial Beach Boulevard, 8th Street, and 9th Street. Imperial Beach Boulevard and 9th Street are classified as a four-lane Class I Collectors in the City of Imperial Beach Circulation Element. 8th Street is a non-circulation element roadway operating as a two-lane Residential Collector.

The following roadway segments and intersections were analyzed for the purposes of this study:

Roadway Segments

- ❖ 8th Street: North of Imperial Beach Boulevard
- ❖ 9th Street: North of Imperial Beach Boulevard
- ❖ Imperial Beach Blvd: West of 8th Street
- ❖ Imperial Beach Blvd: 8th Street to 9th Street
- ❖ Imperial Beach Blvd: East of 9th Street

Intersections

- ❖ Imperial Beach Boulevard / 8th Street
- ❖ Imperial Beach Boulevard / 9th Street

Daily traffic counts were collected in November 2010 and are provided in **Attachment A**. In addition, p.m. peak hour turning movement volumes were collected at the intersections of Imperial Beach Boulevard / 8th Street and Imperial Beach Blvd / 9th Street from 4:00 to 6:00 p.m. The library is not open during the morning hours when peak traffic occurs; therefore analysis was not conducted for the a.m. peak hour. Existing daily and peak hour traffic volumes are illustrated in **Exhibit 3**.

The daily traffic volumes were used to evaluate the associated levels of service for each roadway segment. Levels of service (LOS) are determined based on the ratio of volume to capacity. Capacity thresholds used in this analysis were determined from the SANTEC/ITE "Traffic Study Guidelines" and regionally accepted threshold as identified by the County of San Diego. The capacity threshold table for all roadway classifications is provided in **Attachment B**. The City of Imperial Beach goal for acceptable levels of service is LOS C or better on arterial streets, local streets, and signalized intersections. As shown in Table 1, all roadway segments surrounding the library site currently operate at level of service (LOS) A.

Table 1
Existing Daily Traffic Volumes and Levels of Service

Roadway	Segment	Classification (# Lanes)	LOS C Threshold	Daily Capacity (LOS E)	Existing ADT	LOS
8th St:	North of Imperial Beach Blvd	Local Street (2)	4,500	⁽¹⁾	665	A
9th St:	North of Imperial Beach Blvd	Class I Collector (4)	27,400	34,200	5,692	A
Imperial Beach Blvd:	West of 8 th St	Class I Collector (4)	27,400	34,200	11,471	A
	between 8th St & 9th St	Class I Collector (4)	27,400	34,200	12,087	A
	East of 9th St	Class I Collector (4)	27,400	34,200	14,050	A

⁽¹⁾ Levels of service and capacity thresholds are not intended to be applied to local residential streets since their primary purpose is to serve abutting lots, not carry through traffic.

The p.m. peak hour operating conditions of the two study intersections were evaluated using the Highway Capacity Manual (HCM) methodology. Level of service for intersections using the HCM methodology is determined based on an average delay per vehicle. LOS thresholds are provided in Attachment B. The results of the intersection analysis are summarized in **Table 2**. As shown in Table 2, both intersections currently operate at acceptable levels of service.

Table 2
Existing P.M. Peak Hour Intersection Levels of Service

Intersection	Traffic Control	Delay (sec.)	LOS
Imperial Beach Blvd / 8 th Street	Unsignalized	15.2	C
Imperial Beach Blvd / 9 th Street	Signalized	25.2	C

Existing Parking Demand

RBF monitored the parking demand at the library every 15 minutes for a period of eight (8) hours on a typical weekday. Parking in the library parking lot and on-street public parking along 8th Street within 300 feet of the library was observed. Based on observations and conversations with library staff, the peak periods at the library occur on weekdays from 12:00 to 1:00 p.m. and again from 2:00 to 4:00 p.m.

Table 3 summarizes the observed parking lot and on-street parking demand at the library. As shown in Table 3, the maximum weekday parking demand occurred between 12:15 and 12:30 p.m. when approximately 22 total (on-site and on-street) parking spaces were occupied by patrons of the library. The parking demand rate is then calculated by dividing the total square feet of library space by the total demand for parking. Based on this methodology, the maximum demand is one space per 230 square feet.

Table 3
Observed Library Parking Demand
For Existing 5,000 Square Foot Library

Time of Day (p.m.)	Spaces Occupied in Library Parking Lot (11 Spaces Available)	Observed On-Street Parking – Library Only (30 Spaced Monitored)	Total Spaces Occupied by Library Patrons
12:00	10	9	19
12:15	11	11	22
12:30	11	8	19
12:45	8	7	15
1:00	5	5	10
1:15	8	4	12
1:30	7	5	12
1:45	7	7	14
2:00	6	9	15
2:15	7	8	15
2:30	7	6	13
2:45	6	8	14
3:00	7	6	13
3:15	7	7	14
3:30	5	9	14
3:45	6	9	15
4:00	7	8	15
4:15	7	5	12
4:30	5	5	10
4:45	4	7	11
5:00	5	7	12
5:15	5	6	11
5:30	5	4	9
5:45	6	6	12
6:00	7	5	12
6:15	6	5	11
6:30	6	5	11
6:45	5	4	9
7:00	5	3	8
7:15	6	1	7
7:30	4	1	5
7:45	4	1	5
Maximum Demand	11	11	22
Parking Demand Rate (Square Feet)			1 / 230¹ SF

¹Rounded to nearest tenth

During the observation period, RBF staff collected occupancy data for all on-street parking spaces. Vehicles occupying the parking spaces were classified as either “library” or “other”. The parking counts listed in Table 3 reflect the occupancy for library patrons only. The on-street parking spaces along 8th Street are shared with the adjacent residents and Veterans Park visitors. Several homes along 8th Street across from Veterans Park do not have garages; therefore, the on-street parking is utilized by residents. During the observation period, on-street parking on both the east and west side

of 8th Street was never fully occupied by either library or other uses. During the peak period, when demand for library parking is the highest (12:30 to 12:45 p.m.), the data suggests the demand for parking for other uses (residences, park, community center) is low. Therefore, sufficient capacity is available to accommodate the existing library demand and an increase in demand for parking with the proposed expansion.

Future Parking Demand

Table 4 shows a comparison of parking requirements. The City of Imperial Beach is the process of updating their Zoning Element to reflect the use of the Institute of Transportation Engineers (ITE) parking demand rate for a Library. Based on the ITE parking rate, the City of Imperial Beach requires 3.1 parking spaces per 1,000 square-feet, which converts to one (1) parking space per 323 square-feet. As shown in Table 4, the City's parking rate is lower than the observed peak demand for parking at this site.

Table 4
Comparison of Parking Rates

Parking Rate per Square Feet (SF)	Existing & Proposed Land Use	# Parking Stalls
ITE 3rd Edition Parking Generation – (Suburban) Library Land Use Code 590 (City of Imperial Beach Parking Requirement)		
3.1 spaces / 1,000 SF (1 space / 323 SF)	Existing 5,000 SF Library	16
	Proposed 12,000 SF Library	38
Observed Parking Survey		
1 space / 230 SF	Existing 5,000 SF Library	22
	Proposed 12,000 SF Library	53

With the proposed expansion from 5,000 square feet to up to 12,000 square feet, the minimum required number of parking spaces and demand for those spaces will increase from 16 spaces to 38 spaces. According to current City and ADA standards, 3 ADA parking spaces will need to be provided for a library of this size. Of the 38 spaces required, up to three (3) spaces will need to be provided for staff. The proposed library expansion will remove the existing on-site parking lot (11 parking stalls). The proposed expansion will require a demand for 38 parking spaces that will not be provided on-site; therefore, the parking demand for the library will need to utilize the on-street parking spaces along 8th Street.

The County plans to increase the number of parking spaces along the east side of 8th Street from 33 to 50 spaces, which will provide an additional 17 on-street spaces for public use. The three parallel parking spaces adjacent to the library building will be removed to construct a curb extension, and 50 angled parking spaces will be striped along the east side of 8th Street fronting the library, community center and Veteran's Park. The angled parking spaces will be restriped from the existing 45 degrees to 60 degrees to accommodate the additional parking spaces. All parking spaces will be striped with the required dimensions per the County of San Diego's Parking Design Manual.

Providing 60-degree angled parking will require a wider turn radius for vehicles to back out onto the street. Since angled parking is only planned on one side of the street, there is sufficient width for vehicles to safely maneuver from the parking space onto 8th Street. Because 8th Street is a local undivided street with relatively low traffic volumes, conflicts between parking vehicles and through traffic are expected to be minimal with the restriped angled parking spaces.

City staff indicated that the existing parallel parking spaces along the west side of 8th Street will likely be restricted to residential use only. Therefore, it is assumed that the 15 existing parallel parking spaces on the west side of 8th Street closest to the library will not be available for public use.

The Imperial Beach Library has entered into a 20-year shared parking agreement with the St. James Lutheran Church, which is located directly east of the library site. The shared parking agreement will be for weekday and Saturday use of 21 parking stalls within the 75-stall parking lot owned by the church. These 21 parking stalls will be specifically assigned for the library use during the library's business hours. Most of the parking spaces in the church lot remain unoccupied during the week when church events are not occurring. A few vehicles park in the church parking lot from the adjacent senior apartment building, which is owned and operated by the church. Services and meetings are primarily held at the church on Sundays. Since the library is closed on Sundays, sharing the church parking lot would provide an abundance of parking. A pedestrian trail within Veterans Park currently connects the library and church.

Exhibit 4 illustrates the future public parking inventory that will be available for the library, including the 21 parking spaces to be shared with St. James Lutheran Church.

A minimum of 38 parking spaces will be needed to serve the proposed expansion of the library. A total of 50 public parking spaces will be provided along the east side of 8th Street, and an additional 21 shared parking spaces will be available within the St. James Lutheran Church parking lot.

Table 5 shows the forecast library parking demand. As shown, sufficient off-site public and shared parking will be available (71 spaces) to accommodate the library peak demand.

It should be noted that the parking observations for this study were performed on a weekday. It may be likely that the on-street parking along 8th Street experiences higher occupancy on weekends when more residents are home and activity at Veterans Park increases. In the event that public parking along 8th Street is not available, additional parking would be available in the Civic Center parking lot located on the south side of Imperial Beach Boulevard. Although the Civic Center parking lot is in short supply during the week, the parking lot has a sufficient parking supply on the weekend when the Civic Center is closed. The City of Imperial Beach recently installed a pedestrian crosswalk with a raised median on Imperial Beach Boulevard in front of the Civic Center, directly between the Civic Center and the existing transit stop adjacent to the library. The installation of the crosswalk has greatly improved the pedestrian connectivity across Imperial Beach Boulevard between the library and Civic Center.

Table 5
Forecast On-Site and Off-Site Parking Demand

Time	Existing Spaces Occupied by Library Patrons (5,000 sf Library) ⁽¹⁾	Total Forecast Demand for Parking (12,000 sf Library)	Net Increase in Parking Demand with Library Expansion	Unoccupied Public Parking Spaces with Library Expansion ⁽²⁾
12:00	19	33	14	38
12:15	22	38	16	33
12:30	19	33	14	38
12:45	15	26	11	45
1:00	10	17	7	54
1:15	12	21	9	50
1:30	12	21	9	50
1:45	14	24	10	47
2:00	15	26	11	45
2:15	15	26	11	45
2:30	13	22	9	49
2:45	14	24	10	47
3:00	13	22	9	49
3:15	14	24	10	47
3:30	14	24	10	47
3:45	15	26	11	45
4:00	15	26	11	45
4:15	12	21	9	50
4:30	10	17	7	54
4:45	11	19	8	52
5:00	12	21	9	50
5:15	11	19	8	52
5:30	9	16	7	55
5:45	12	21	9	50
6:00	12	21	9	50
6:15	11	19	8	52
6:30	11	19	8	52
6:45	9	16	7	55
7:00	8	14	6	57
7:15	7	12	5	59
7:30	5	9	4	62
7:45	5	9	4	62

Note: Peak parking demand shaded in gray and highlighted in **bold**.

⁽¹⁾ Existing occupied spaces include both the existing library parking lot and off-site parking spaces along 8th Street.

⁽²⁾ Public parking spaces available for the library use include 50 on-street spaces along 8th Street and 21 spaces within St. James Church parking lot per the shared parking agreement with the church (71 parking spaces total).

Mode Splits

Mode splits collected during the trip generation observation period determined that 68% of library patrons arrived by car, 23% walked, 5% rode a bicycle and 4% were transit users. **Table 6** summarizes the observed trip generation mode splits.

Table 6
Observed Mode Split

Time	Drive		Walk	Bike	Transit	Total Trips
	# Cars	# Persons				
12:00	5	8	1		1	7
12:30	3	6	7	1		12
1:00	9	11	2			11
1:30	7	10	4	1	1	13
2:00	5	7	4	1		11
2:30	5	8	19	2	5	32
3:00	6	10	1	1		9
3:30	9	14	2	1	2	16
4:00	7	19		1		10
4:30	11	15	2	3		18
5:00	10	19	2			12
5:30	6	10	3			9
6:00	3	3				3
TOTALS	86	140	47	11	9	163
Mode Split		68%	23%	5%	4%	-

Trip Generation Rates

As shown in Table 6, the peak vehicular demand occurs between 4:30 and 5:30 p.m. when 21 vehicles arrive and depart from the library. Based on a 5,000 square foot library, this equates to approximately 8 trips per 1,000 square feet in the p.m. peak hour. The SANDAG “(Not So) Brief Guide of Vehicular Traffic Generation Rates” suggests the average p.m. peak trip generation is 10% of the total daily trips to and from the library. This would suggest that the daily trip generation for the library site would be 400 trips per day. Observations in the field and data collected for this project suggests that the p.m. peak period accounts for approximately 14% of the total daily traffic. During the off-peak periods, there is a higher percentage of bicycle, transit, and walking trips to the site, which reduces the total vehicular traffic demand.

The net increase in square footage for the library expansion is 7,000 square feet (12,000 – 5,000). The project specific trip rates were applied to the net increase to determine impacts to traffic and circulation with the proposed project. Based on the observations, the observed trip rates were applied to the expansion project to evaluate the potential traffic impacts, as shown in **Table 7**.

Table 7
Observed Trip Generation Rates and
Forecasted Project Trip Generation

Land Use	Size		Daily Trips	AM Peak Hour ¹			PM Peak Hour		
				Total	In	Out	Total	In	Out
(Observed) Trip Generation Rates									
Library	-		60 per 1,000 sf	-	-	-	14%	50%	50%
Forecast Trip Generation									
Library	7	KSF	420	-	-	-	59	30	29

¹The library is not open during the a.m. peak hour

As shown in Table 7, the expansion of the library by up to 7,000 square feet would result in approximately 420 additional daily trips, including 59 additional p.m. peak hour trips.

Trip Distribution and Assignment

The distribution of project trips will primarily depend on the availability of parking along 8th Street and the walking distance from the parking spaces to the library site. It is assumed that approximately 60% of the trips will utilize the parking spaces along 8th Street, and approximately 40% will use the St. James Church parking lot to access the library. The project trip distribution is shown in **Exhibit 5**. Wayfinding signage within the park, as illustrated in Exhibit 5, is recommended to guide patrons from the church parking lot to the library.

Utilizing the trip distribution shown in Exhibit 5, project trips were assigned to the roadway network. The project trip assignment of daily and p.m. peak hour project trips are illustrated in **Exhibit 6**.

Existing Plus Project Traffic Conditions

Existing plus project daily and peak hour traffic volumes are illustrated in **Exhibit 7**. The daily roadway segment volumes and levels of service are shown in **Table 8**. As shown, the study roadways are forecast to continue operating at acceptable levels of service with the proposed expansion of the library.

Table 8
Existing Plus Project Conditions
Daily Roadway Volumes and LOS

Roadway	Segment	Class (# Lanes)	LOS C Threshold	Daily Capacity (LOS E)	Existing ADT	Project Trips	Existing Plus Project ADT	V/C	LOS
8th St:	North of Imperial Beach Blvd	Local Street (2)	4,500	(1)	665	252	917	(1)	A
9th St:	North of Imperial Beach Blvd	Class I Collector (4)	27,400	34,200	5,692	168	5,860	0.17	A
Imperial Beach Blvd:	West of 8 th St	Class I Collector (4)	27,400	34,200	11,471	210	11,681	0.34	A
	between 8th St & 9th St	Class I Collector (4)	27,400	34,200	12,087	42	12,129	0.35	A
	East of 9th St	Class I Collector (4)	27,400	34,200	14,050	210	14,260	0.42	A

V/C = Volume-to-Capacity Ratio (based on daily capacity at LOS E)

(1) Levels of service and capacity thresholds are not intended to be applied to local residential streets since their primary purpose is to serve abutting lots, not carry through traffic.

Table 9 summarizes the p.m. peak hour intersection levels of service with the addition of project trips to existing traffic volumes. HCM worksheets are provided in **Attachment C**.

As shown in Table 9, the addition of project trips to the study intersections does not result in a change in operating conditions from acceptable to deficient at any location. The study intersections are forecast to continue to operate at acceptable levels of service with the addition of project-related trips. Therefore, no significant impacts are identified with the proposed expansion of the library.

Table 9
Existing Plus Project P.M. Peak Hour Intersection Levels of Service

Intersection	Traffic Control	Existing		Existing Plus Project	
		Delay (sec.)	LOS	Delay (sec.)	LOS
Imperial Beach Blvd / 8 th Street	Unsignalized	16.9	C	16.9	C
Imperial Beach Blvd / 9 th Street	Signalized	21.5	C	21.7	C

Conclusion

Observation of the existing library revealed an existing trip generation of 60 trips per thousand square feet. Using the observed trip rate, the proposed expansion of the Imperial Beach Branch Library from 5,000 square feet to up to 12,000 square feet is forecast to result in an increase of 420 daily trips. The expansion is not forecast to result in any significant impacts along the study roadway segments or intersections.

The proposed library expansion will result in the removal of the existing 11-stall parking lot on the north side of the library building. The County plans to restripe the angled parking spaces along the east side of 8th Street to provide a total of 50 public parking spaces. In addition, the library has entered a shared parking agreement with St. James Lutheran Church for use of 21 parking spaces that will be assigned for use by the library during the library's business hours Monday through Saturday. The library is closed on Sundays when the church parking lot is fully utilized.

The proposed expansion of the library to 12,000 square-feet is forecast to generate a peak parking demand for 38 parking spaces. A total of 71 public parking spaces will be available for the library use; therefore, sufficient parking will be provided during the peak demand period for the library.

It should be noted that the parking observations for this study were performed on a weekday. It may be likely that the on-street parking along 8th Street experiences higher occupancy on weekends when more residents are home and activity at Veterans Park increases. In the event that public parking along 8th Street is not available, additional parking would be available in the Civic Center parking lot located on the south side of Imperial Beach Boulevard. Ample parking is available at the Civic Center when it is closed on the weekends.

Sincerely,

A handwritten signature in black ink, appearing to read "David Mizell", written in a cursive style.

David Mizell, AICP, PTP
Transportation Planning Services

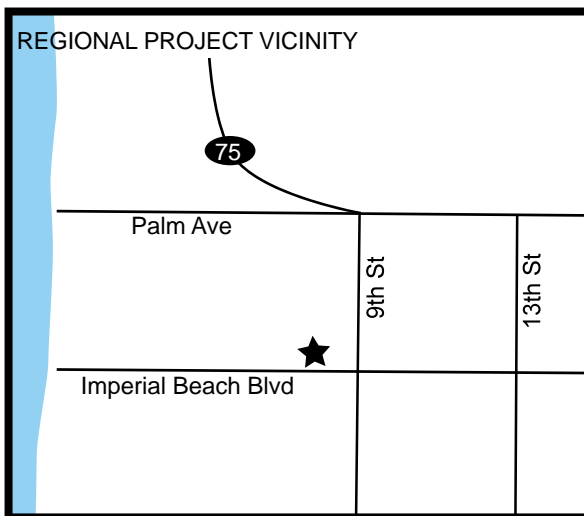
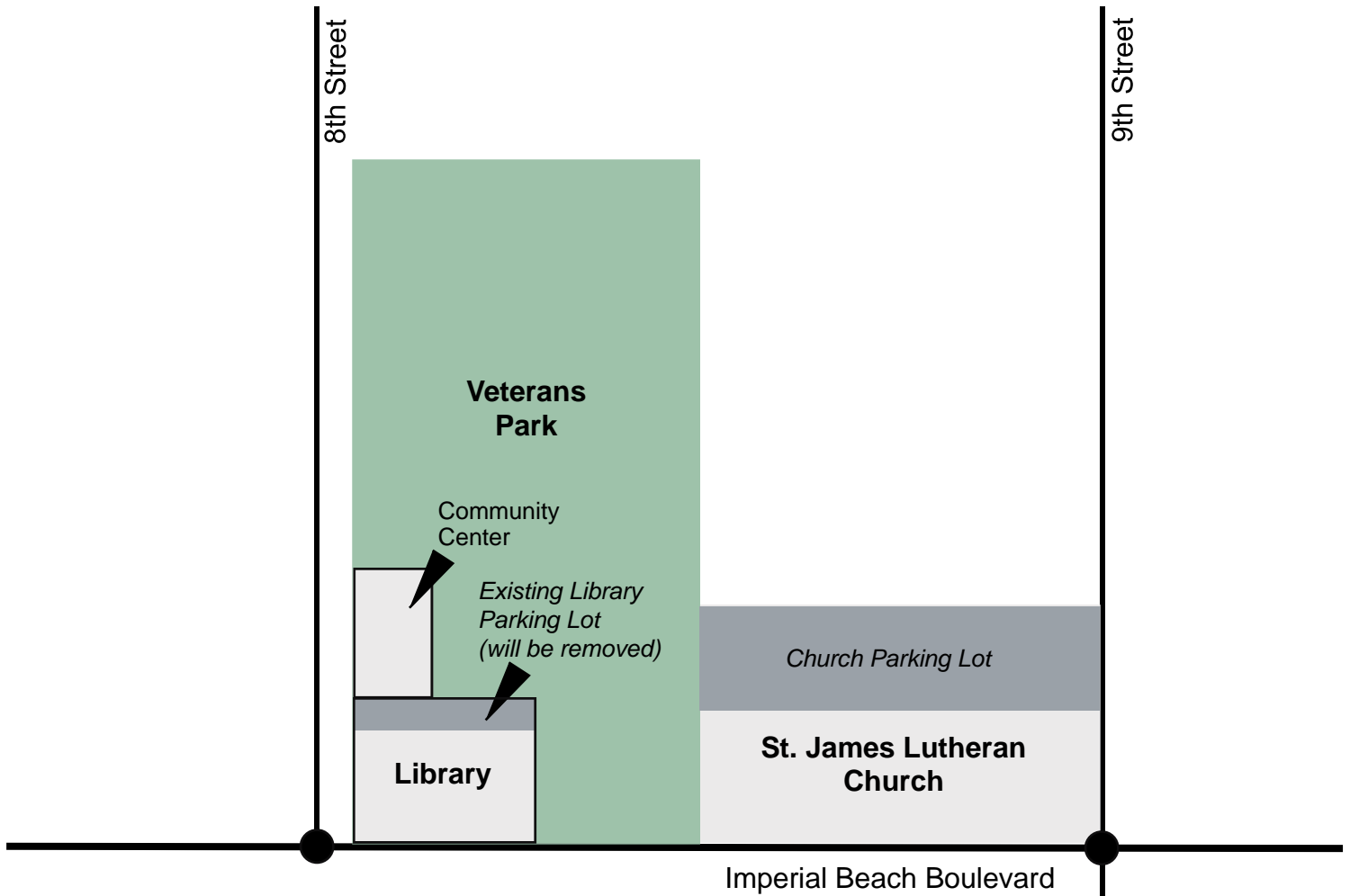
Attachments:

Supporting Exhibits (1-7)

A: Traffic Count Data

B: Roadway Classifications

C: HCM Worksheets



LEGEND:

● Study Intersection



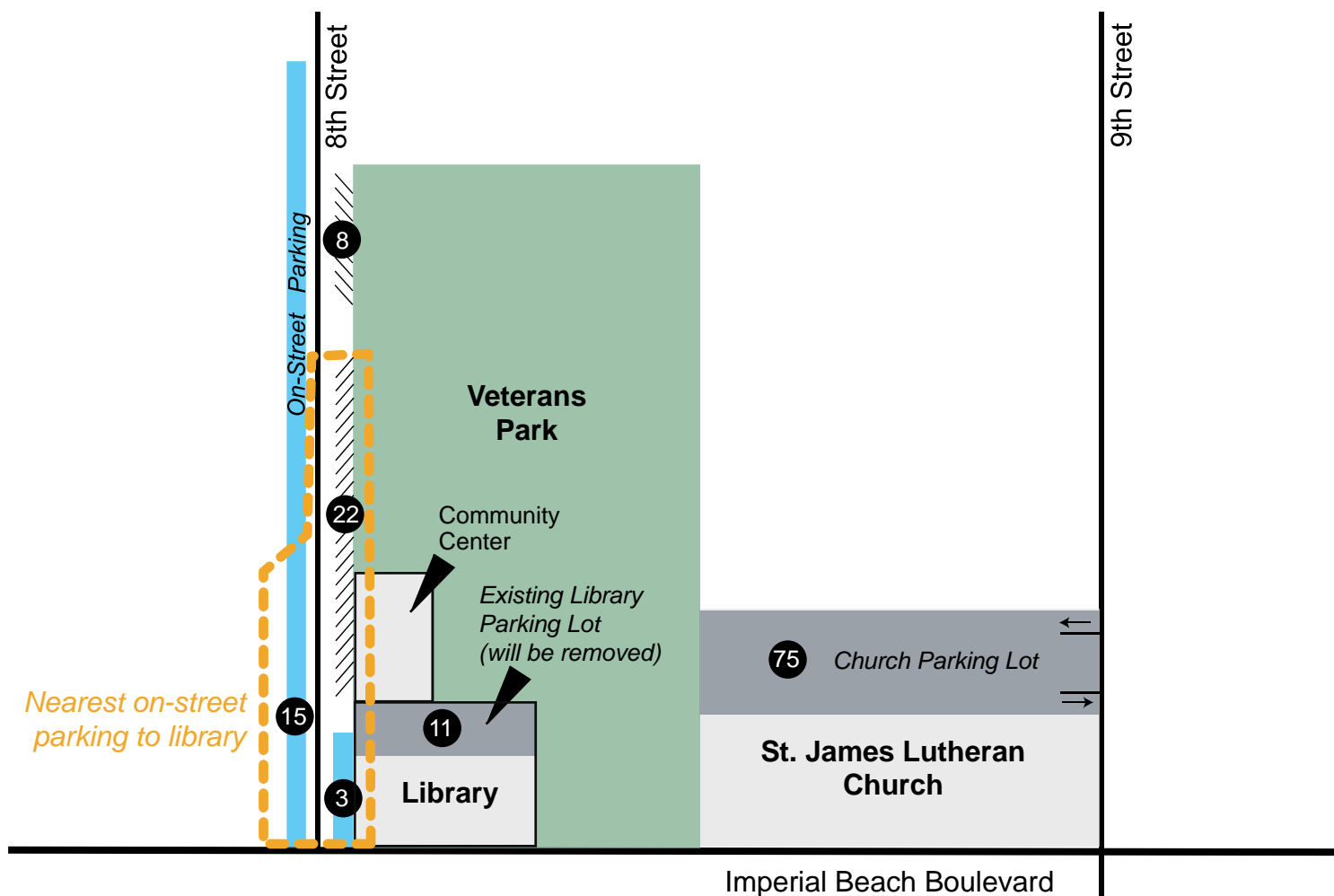
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PROJECT STUDY AREA

EXHIBIT 1



LEGEND:

- # Number of Existing Parking Spaces
- On-Street Parallel Parking
- On-Street Diagonal Parking

* Existing parking inventory at the time parking survey was collected (November 2010).



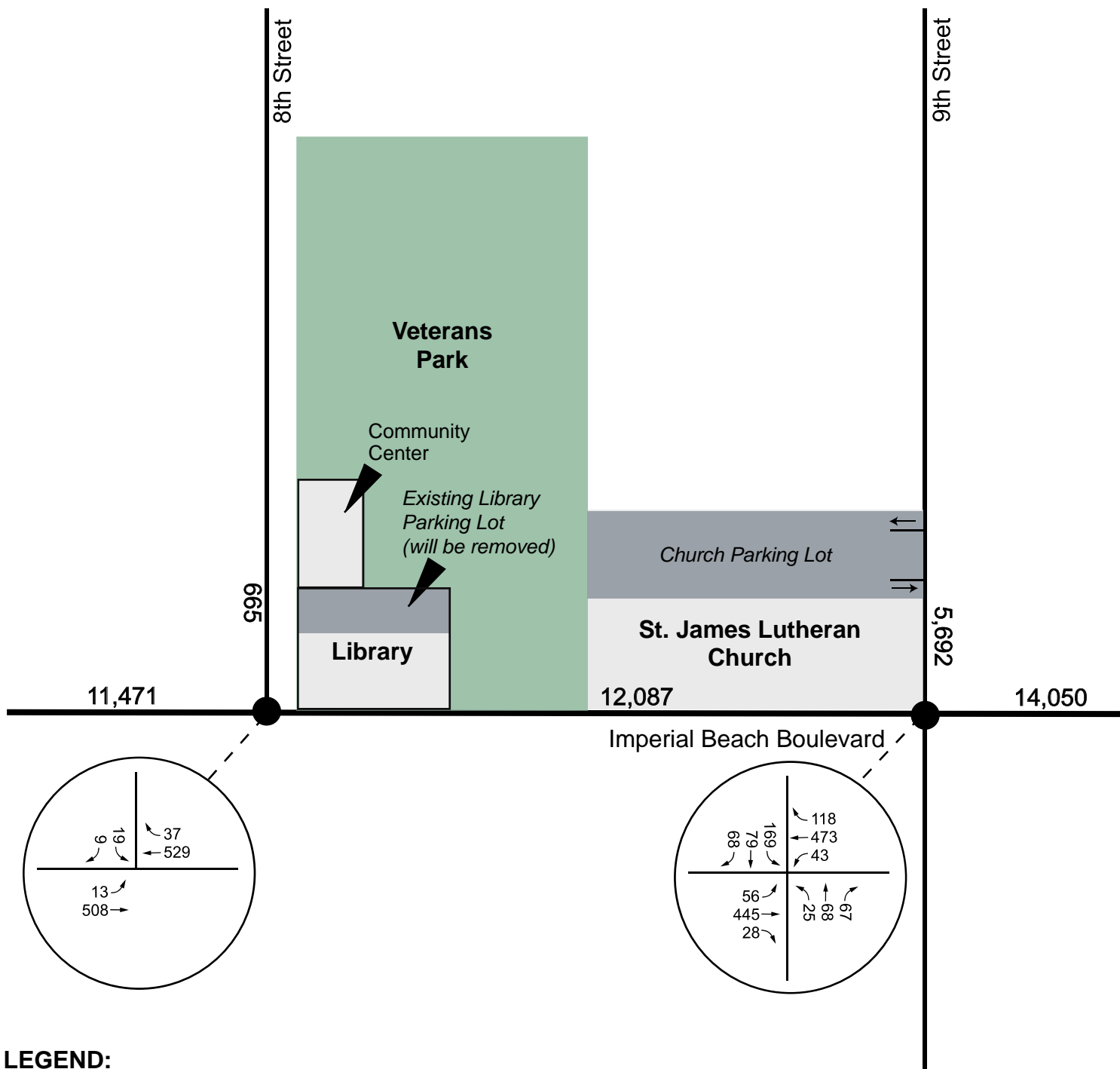
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EXISTING ON-STREET AND OFF-STREET PARKING *

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EXHIBIT 2



LEGEND:

X,XXX Daily Traffic Volume
xx P.M. Peak Hour Volume



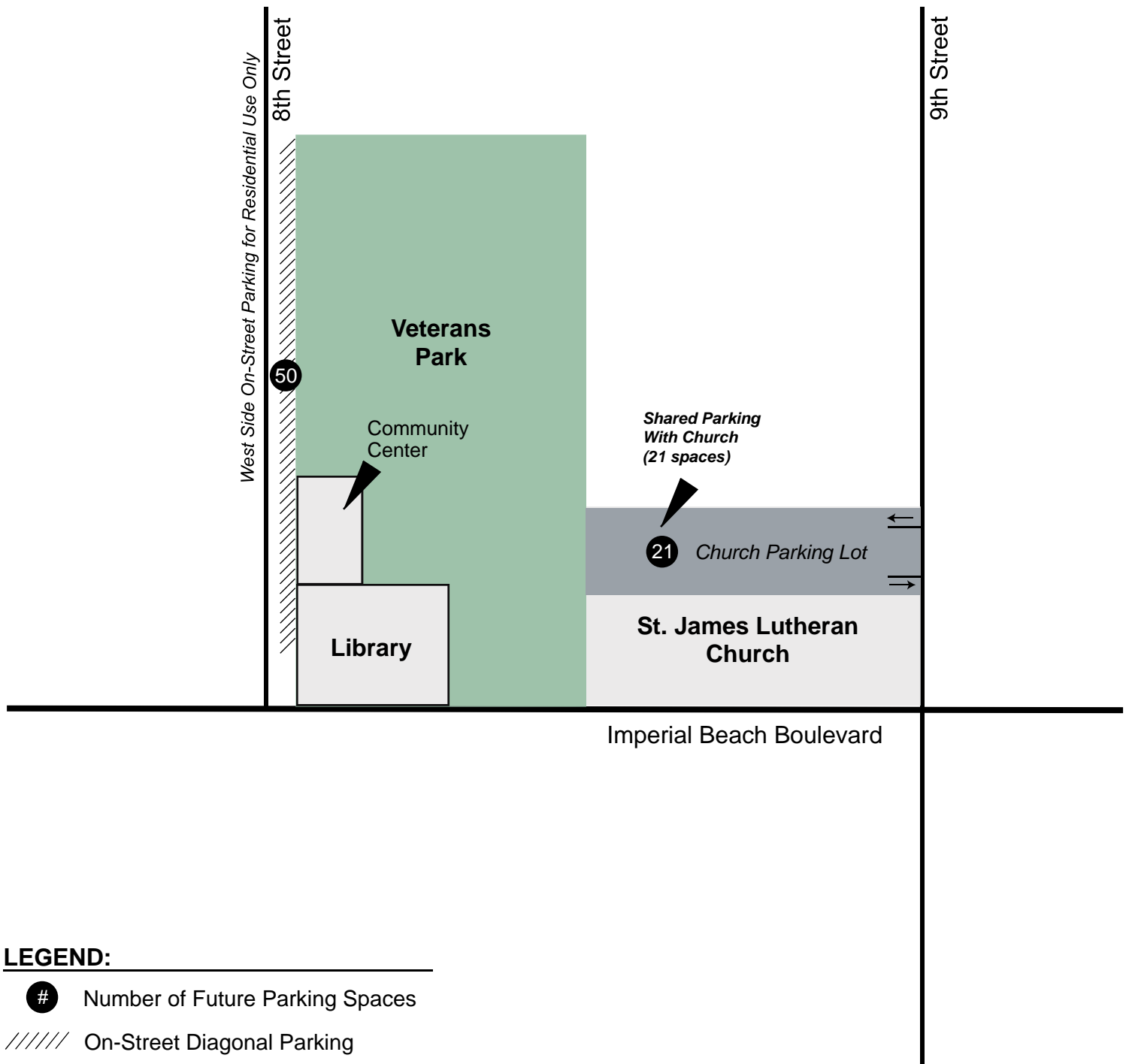
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EXISTING TRAFFIC VOLUMES

EXHIBIT 3



LEGEND:

- # Number of Future Parking Spaces
- ////// On-Street Diagonal Parking



NOT TO SCALE



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FUTURE ON-STREET AND OFF-STREET PARKING

EXHIBIT 4



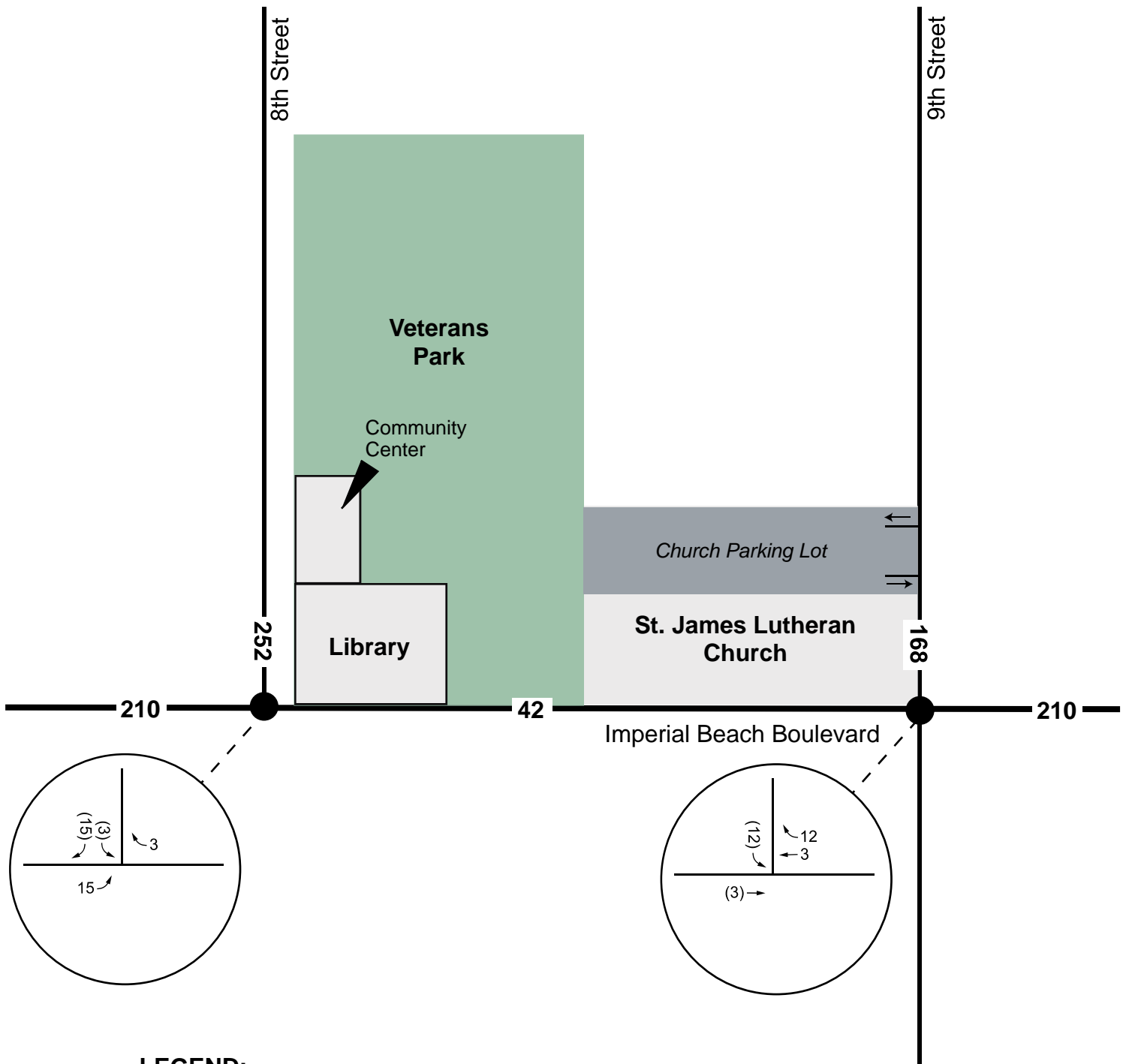
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LIBRARY PROJECT TRIP DISTRIBUTION

EXHIBIT 5



LEGEND:

- XXX Daily Project Trips
- xx Inbound P.M. Peak Hour Trips
- (xx) Outbound P.M. Peak Hour Trips



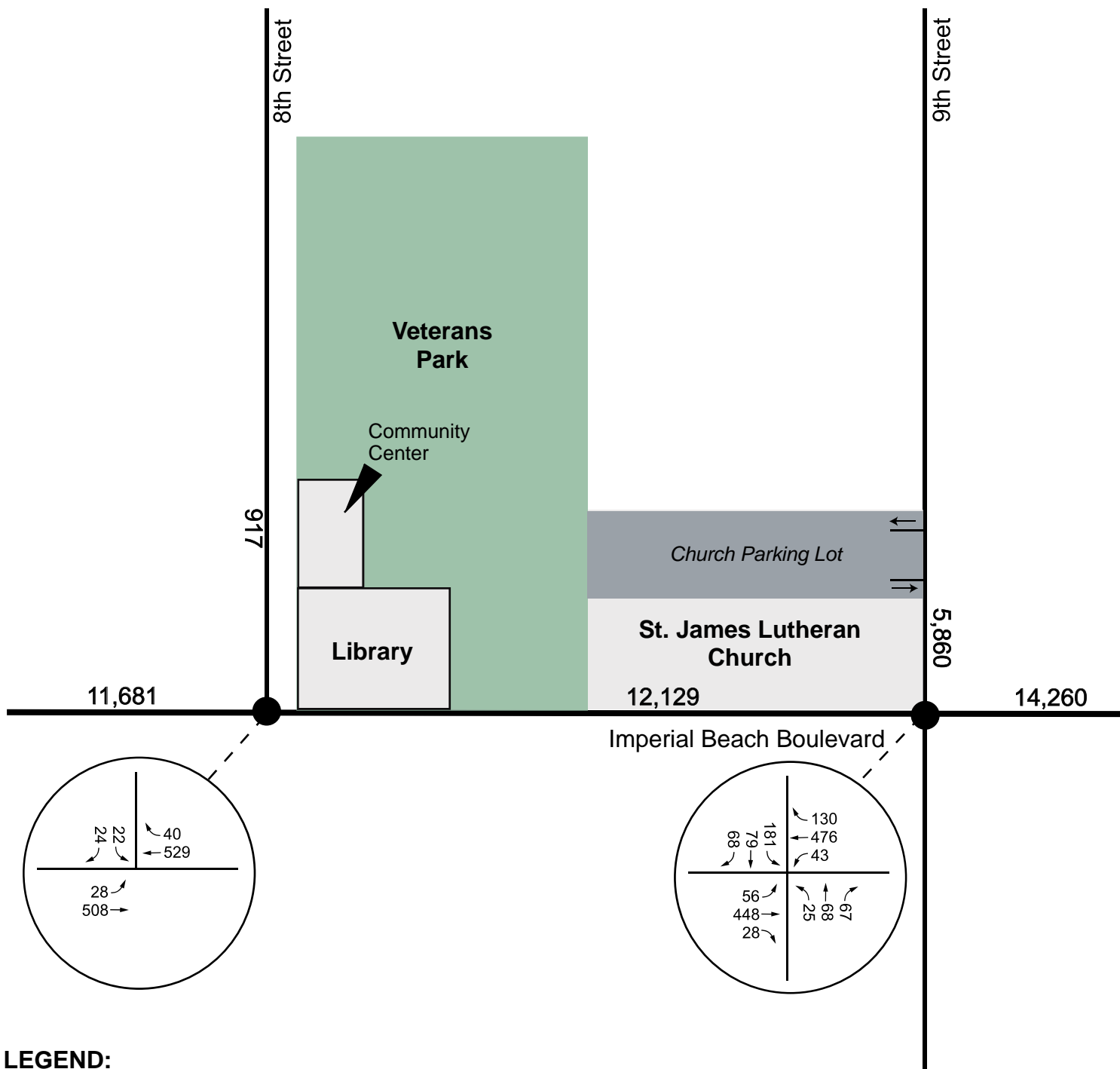
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PROJECT TRIP ASSIGNMENT

EXHIBIT 6



LEGEND:

X,XXX Daily Traffic Volume
 xx P.M. Peak Hour Volume



NOT TO SCALE



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EXISTING PLUS PROJECT TRAFFIC VOLUMES

EXHIBIT 7

Attachment A Traffic Counts

Volumes for: Thursday, November 18, 2010						City: Imperial Beach		Daily Totals				Total		
Location: 8th St N/o Imperial Beach Blvd						Project: 10-4360-001		NB	SB	EB	WB	665		
AM Period	NB		SB		EB	WB	PM Period	NB		SB		EB	WB	
00:00	1		1				12:00	7		9				
00:15	0		0				12:15	5		7				
00:30	0		0				12:30	2		3				
00:45	0	1	0	1		2	12:45	11	25	3	22			47
01:00	0		0				13:00	2		2				
01:15	0		0				13:15	7		7				
01:30	0		0				13:30	7		6				
01:45	0		0				13:45	8	24	6	21			45
02:00	0		0				14:00	4		4				
02:15	0		0				14:15	7		6				
02:30	0		0				14:30	9		6				
02:45	0		0				14:45	8	28	14	30			58
03:00	1		0				15:00	8		18				
03:15	1		0				15:15	7		3				
03:30	0		0				15:30	10		9				
03:45	0	2	0			2	15:45	7	32	5	35			67
04:00	0		0				16:00	7		9				
04:15	0		0				16:15	8		4				
04:30	0		0				16:30	15		7				
04:45	0		0				16:45	7	37	7	27			64
05:00	0		0				17:00	15		9				
05:15	0		0				17:15	3		10				
05:30	1		0				17:30	7		6				
05:45	2	3	3	3		6	17:45	6	31	5	30			61
06:00	1		0				18:00	8		7				
06:15	2		2				18:15	5		3				
06:30	1		1				18:30	0		4				
06:45	3	7	2	5		12	18:45	4	17	1	15			32
07:00	6		2				19:00	2		6				
07:15	9		4				19:15	4		1				
07:30	6		5				19:30	1		0				
07:45	7	28	5	16		44	19:45	0	7	4	11			18
08:00	6		4				20:00	2		0				
08:15	11		5				20:15	2		1				
08:30	10		3				20:30	1		0				
08:45	3	30	1	13		43	20:45	0	5	5	6			11
09:00	10		2				21:00	4		2				
09:15	8		2				21:15	2		0				
09:30	8		10				21:30	1		2				
09:45	10	36	1	15		51	21:45	1	8	0	4			12
10:00	5		1				22:00	1		1				
10:15	8		5				22:15	4		0				
10:30	2		3				22:30	0		0				
10:45	6	21	1	10		31	22:45	0	5	0	1			6
11:00	5		8				23:00	1		0				
11:15	7		3				23:15	0		0				
11:30	14		4				23:30	0		1				
11:45	5	31	5	20		51	23:45	0	1	0	1			2
Total Vol.														423
Daily Totals :								NB	SB	EB	WB	Total		
								379	286	0	0	665		
AM						PM								
Split %	65.7%		34.3%		36.4%		52.0%		48.0%		63.6%			
AM						PM								
Peak Hr.	09:00		11:30		11:30		16:15		14:15		14:45			
Volume	36		25		56		45		44		77			
P.H.F.	0.900		0.694		0.778		0.750		0.611		0.740			
7 - 9 Vol.	58		29		87		68		57		125			
Peak Hr.	07:45		07:30		07:45		16:15		16:30		16:30			
Volume	34		19		51		45		33		73			
P.H.F.	0.773		0.950		0.797		0.750		0.825		0.760			

Volumes for: Thursday, November 18, 2010					City: Imperial Beach					Daily Totals				Total
Location: 9th St N/o Imperial Beach Blvd					Project: 10-4360-002					NB	SB	EB	WB	
AM Period					PM Period					2,925	2,767	0	0	5,692
NB	SB	EB	WB		NB	SB	EB	WB						
00:00	6	5			12:00	40	50							
00:15	4	4			12:15	43	49							
00:30	2	1			12:30	35	63							
00:45	2	14	4	14	12:45	56	174	39	201					375
01:00	1	1			13:00	40	57							
01:15	3	0			13:15	33	36							
01:30	2	4			13:30	38	38							
01:45	1	7	0	5	13:45	52	163	32	163					326
02:00	0	4			14:00	39	38							
02:15	1	0			14:15	38	47							
02:30	2	4			14:30	53	74							
02:45	2	5	0	8	14:45	52	182	66	225					407
03:00	2	1			15:00	51	84							
03:15	2	0			15:15	53	66							
03:30	1	0			15:30	51	61							
03:45	3	8	2	3	15:45	60	215	71	282					497
04:00	3	1			16:00	57	76							
04:15	4	1			16:15	60	78							
04:30	7	2			16:30	48	81							
04:45	21	35	0	4	16:45	62	227	68	303					530
05:00	18	3			17:00	61	80							
05:15	25	1			17:15	66	77							
05:30	34	2			17:30	46	63							
05:45	38	115	4	10	17:45	40	213	43	263					476
06:00	29	5			18:00	33	59							
06:15	44	10			18:15	32	37							
06:30	38	18			18:30	29	40							
06:45	54	165	21	54	18:45	26	120	40	176					296
07:00	48	23			19:00	31	38							
07:15	93	29			19:15	24	33							
07:30	59	22			19:30	23	36							
07:45	79	279	51	125	19:45	22	100	30	137					237
08:00	69	50			20:00	15	26							
08:15	63	51			20:15	33	32							
08:30	48	26			20:30	13	20							
08:45	45	225	31	158	20:45	16	77	44	122					199
09:00	39	32			21:00	12	22							
09:15	41	31			21:15	13	14							
09:30	39	43			21:30	9	10							
09:45	40	159	42	148	21:45	11	45	9	55					100
10:00	28	23			22:00	10	7							
10:15	43	23			22:15	15	10							
10:30	45	33			22:30	9	7							
10:45	43	159	35	114	22:45	8	42	15	39					81
11:00	48	28			23:00	11	10							
11:15	42	37			23:15	4	4							
11:30	39	47			23:30	5	5							
11:45	43	172	25	137	23:45	4	24	2	21					45
Total Vol.					2123					1582				3569
										NB	SB	EB	WB	Total
					Daily Totals :					2,925	2,767	0	0	5,692
AM					PM									
Split %	63.3%	36.7%		37.3%		44.3%	55.7%		62.7%					
AM					PM									
Peak Hr.	07:15	11:45		07:15	Peak Hr.	16:30	16:15		16:30					
Volume	300	187		452	Volume	237	307		543					
P.H.F.	0.806	0.742		0.869	P.H.F.	0.898	0.948		0.949					
7 - 9 Vol.	504	283		787	4 - 6 Vol.	440	566		1006					
Peak Hr.	07:15	07:45		07:15	Peak Hr.	16:30	16:15		16:30					
Volume	300	178		452	Volume	237	307		543					
P.H.F.	0.806	0.873		0.869	P.H.F.	0.898	0.948		0.949					

Volumes for: Thursday, November 18, 2010						City: Imperial Beach		Daily Totals				Total
Location: Imperial Beach W/o 8th St						Project: 10-4360-003		NB	SB	EB	WB	
								0	0	5,725	5,746	11,471
AM Period	NB	SB	EB	WB		PM Period	NB	SB	EB	WB		
00:00			11	11		12:00			72	84		
00:15			10	12		12:15			71	88		
00:30			3	8		12:30			83	90		
00:45			8	32	5	12:45			103	329	88	350
01:00			1		5							679
01:15			6		7	13:00			77	68		
01:30			3		8	13:15			67	71		
01:45			5	15	2	13:30			59	71		
02:00			4		4	13:45			70	273	85	295
02:15			2		3							568
02:30			5		3	14:00			81	73		
02:45			1	12	1	14:15			99	104		
03:00			1		3	14:30			103	154		
03:15			5		0	14:45			139	422	163	494
03:30			2		1							916
03:45			4	12	3	15:00			153	133		
04:00			1		1	15:15			146	117		
04:15			6		0	15:30			110	117		
04:30			11		6	15:45			101	510	109	476
04:45			12	30	3							986
05:00			16		9	16:00			102	114		
05:15			27		10	16:15			115	137		
05:30			30		12	16:30			129	125		
05:45			31	104	17	16:45			121	467	129	505
06:00			46		26							972
06:15			68		35	17:00			149	141		
06:30			63		36	17:15			119	120		
06:45			91	268	78	17:30			106	125		
07:00			126		146	17:45			90	464	111	497
07:15			195		160							961
07:30			124		82	18:00			101	107		
07:45			108	553	96	18:15			76	91		
08:00			107		132	18:30			70	83		
08:15			124		123	18:45			84	331	82	363
08:30			120		87							694
08:45			74	425	89	19:00			78	60		
09:00			76		69	19:15			76	72		
09:15			77		63	19:30			62	71		
09:30			70		54	19:45			55	271	59	262
09:45			75	298	65							533
10:00			66		55	20:00			55	56		
10:15			51		56	20:15			44	68		
10:30			78		46	20:30			25	33		
10:45			58	253	55	20:45			26	150	43	200
11:00			74		52							350
11:15			67		74	21:00			30	48		
11:30			74		77	21:15			30	48		
11:45			69	284	81	21:30			28	32		
					284	21:45			14	102	30	158
					568							260
						22:00			15	33		
						22:15			22	27		
						22:30			19	24		
						22:45			15	71	29	113
												184
						23:00			14	17		
						23:15			14	23		
						23:30			12	10		
						23:45			9	49	12	62
												111
Total Vol.			2286	1971	4257				3439	3775	7214	
						Daily Totals :		NB	SB	EB	WB	Total
								0	0	5,725	5,746	11,471
								PM				
Split %	AM											
	53.7%	46.3%	37.1%							47.7%	52.3%	62.9%
AM				PM								
Peak Hr.	07:00			14:45								
Volume	553			548								
P.H.F.	0.709			0.895								
7 - 9 Vol.	978			931								
Peak Hr.	07:00			16:30								
Volume	553			518								
P.H.F.	0.709			0.869								

Volumes for: Thursday, November 18, 2010								City: Imperial Beach		Daily Totals				Total			
Location: Imperial Beach between 8th St & 9th St Project: 10-4360-004								NB	SB	EB	WB	Total					
								0	0	6,017	6,070	12,087					
AM Period	NB	SB	EB	WB	PM Period			NB	SB	EB	WB						
00:00			11	14	12:00					82	94						
00:15			12	14	12:15					80	92						
00:30			3	8	12:30					83	89						
00:45			9	35	5	41	76	12:45			107	352	98	373	725		
01:00			2		8	13:00					81		75				
01:15			8		7	13:15					77		72				
01:30			2		8	13:30					59		72				
01:45			6	18	3	26	44	13:45			77	294	87	306	600		
02:00			5		5	14:00					79		74				
02:15			2		3	14:15					101		103				
02:30			3		4	14:30					100		166				
02:45			3	13	1	13	26	14:45			156	436	151	494	930		
03:00			2		3	15:00					174		133				
03:15			6		0	15:15					145		122				
03:30			2		2	15:30					123		123				
03:45			6	16	4	9	25	15:45			100	542	117	495	1037		
04:00			3		3	16:00					106		126				
04:15			5		0	16:15					120		150				
04:30			11		6	16:30					136		125				
04:45			10	29	3	12	41	16:45			127	489	129	530	1019		
05:00			14		9	17:00					159		153				
05:15			28		12	17:15					130		123				
05:30			29		12	17:30					126		135				
05:45			31	102	24	57	159	17:45			89	504	111	522	1026		
06:00			44		31	18:00					112		111				
06:15			73		39	18:15					74		101				
06:30			64		41	18:30					77		82				
06:45			89	270	82	193	463	18:45			87	350	87	381	731		
07:00			123		158	19:00					90		61				
07:15			195		170	19:15					81		74				
07:30			130		88	19:30					61		78				
07:45			112	560	103	519	1079	19:45			61	293	56	269	562		
08:00			108		131	20:00					55		62				
08:15			126		131	20:15					49		71				
08:30			127		86	20:30					28		34				
08:45			77	438	93	441	879	20:45			28	160	43	210	370		
09:00			74		75	21:00					30		55				
09:15			81		76	21:15					34		51				
09:30			79		61	21:30					32		34				
09:45			79	313	73	285	598	21:45			14	110	33	173	283		
10:00			68		64	22:00					15		33				
10:15			55		55	22:15					24		33				
10:30			82		52	22:30					17		27				
10:45			63	268	62	233	501	22:45			16	72	28	121	193		
11:00			87		56	23:00					16		22				
11:15			64		79	23:15					13		26				
11:30			73		81	23:30					14		11				
11:45			77	301	80	296	597	23:45			9	52	12	71	123		
Total Vol.			2363		2125		4488				3654		3945		7599		
Daily Totals :								NB	SB	EB	WB	Total					
								0	0	6,017	6,070	12,087					
Split %	AM				PM												
	52.7%		47.3%		37.1%		48.1%		51.9%		62.9%						
AM			07:00		07:00		07:00		PM			14:45		14:30		14:30	
Peak Hr.			560		519		1079		Peak Hr.			598		572		1147	
Volume			0.718		0.763		0.739		Volume			0.859		0.861		0.934	
P.H.F.									P.H.F.								
7 - 9 Vol.			998		960		1958		4 - 6 Vol.			993		1052		2045	
Peak Hr.			07:00		07:00		07:00		Peak Hr.			16:30		16:15		16:15	
Volume			560		519		1079		Volume			552		557		1099	
P.H.F.			0.718		0.763		0.739		P.H.F.			0.868		0.910		0.881	

Volumes for: Thursday, November 18, 2010							City: Imperial Beach		Daily Totals				Total
Location: Imperial Beach E/o 9th St							Project: 10-4360-005		NB	SB	EB	WB	14,050
									0	0	6,968	7,082	
AM Period	NB	SB	EB	WB	PM Period		NB	SB	EB	WB			
00:00			12	16	12:00				101	104			
00:15			12	15	12:15				84	111			
00:30			5	12	12:30				100	85			
00:45			11	40	7	50	90	12:45	106	391	119	419	810
01:00			2	8	13:00				121	91			
01:15			7	9	13:15				85	69			
01:30			5	8	13:30				77	92			
01:45			6	20	6	31	51	13:45	92	375	103	355	730
02:00			7	4	14:00				100	95			
02:15			0	4	14:15				118	114			
02:30			4	1	14:30				151	163			
02:45			2	13	2	11	24	14:45	173	542	165	537	1079
03:00			3	3	15:00				203	163			
03:15			7	3	15:15				167	135			
03:30			4	0	15:30				140	160			
03:45			9	23	6	12	35	15:45	107	617	145	603	1220
04:00			4	4	16:00				128	128			
04:15			5	3	16:15				141	166			
04:30			11	8	16:30				178	150			
04:45			14	34	11	26	60	16:45	159	606	163	607	1213
05:00			22	21	17:00				195	170			
05:15			29	29	17:15				154	161			
05:30			30	29	17:30				138	137			
05:45			35	116	37	116	232	17:45	112	599	142	610	1209
06:00			61	43	18:00				127	110			
06:15			64	57	18:15				82	107			
06:30			80	65	18:30				87	88			
06:45			94	299	83	248	547	18:45	111	407	96	401	808
07:00			138	139	19:00				90	67			
07:15			209	228	19:15				92	93			
07:30			136	149	19:30				69	79			
07:45			112	595	128	644	1239	19:45	64	315	71	310	625
08:00			127	130	20:00				65	57			
08:15			134	152	20:15				48	72			
08:30			135	88	20:30				41	58			
08:45			88	484	117	487	971	20:45	57	211	49	236	447
09:00			81	87	21:00				46	66			
09:15			83	89	21:15				41	66			
09:30			95	72	21:30				35	38			
09:45			92	351	80	328	679	21:45	21	143	37	207	350
10:00			85	66	22:00				21	45			
10:15			50	60	22:15				28	43			
10:30			95	72	22:30				25	26			
10:45			74	304	76	274	578	22:45	18	92	29	143	235
11:00			94	68	23:00				20	24			
11:15			78	92	23:15				14	26			
11:30			92	91	23:30				15	20			
11:45			69	333	92	343	676	23:45	9	58	14	84	142
Total Vol.			2612	2570	5182				4356	4512	8868		
Daily Totals :								NB	SB	EB	WB	Total	
								0	0	6,968	7,082	14,050	
Split %			AM		PM								
			50.4%	49.6%	36.9%			49.1%	50.9%	63.1%			
AM			PM										
Peak Hr.			07:00		07:00		07:00		14:30		16:15		16:30
Volume			595		644		1239		694		649		1330
P.H.F.			0.712		0.706		0.709		0.855		0.954		0.911
7 - 9 Vol.			1079		1131		2210		1205		1217		2422
Peak Hr.			07:00		07:00		07:00		16:30		16:15		16:30
Volume			595		644		1239		686		649		1330
P.H.F.			0.712		0.706		0.709		0.879		0.954		0.911

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: 8th St

DATE: 11/18/2010

LOCATION: City of Imperial Beach

E-W STREET: Imperial Beach Blvd

DAY: THURSDAY

PROJECT# 10-4359-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 0	NR 0	SL 0	ST 1	SR 0	EL 0	ET 2	ER 0	WL 0	WT 2	WR 0	TOTAL
4:00 PM				5		3	2	101			113	5	229
4:15 PM				1		3	2	116			138	7	267
4:30 PM				8		2	2	125			127	14	278
4:45 PM				4		2	3	120			125	4	258
5:00 PM				6		2	6	147			139	12	312
5:15 PM				8		3	0	118			116	3	248
5:30 PM				5		3	2	110			125	7	252
5:45 PM				0		3	3	90			110	4	210
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 37	ST 0	SR 21	EL 20	ET 927	ER 0	WL 0	WT 993	WR 56	TOTAL 2054

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	0	0	0	19	0	9	13	508	0	0	529	37	1115
PEAK HR. FACTOR:	0.000			0.700			0.851			0.937			0.893

CONTROL: 1-Way Stop (SB)

Intersection Turning Movement

Prepared by:



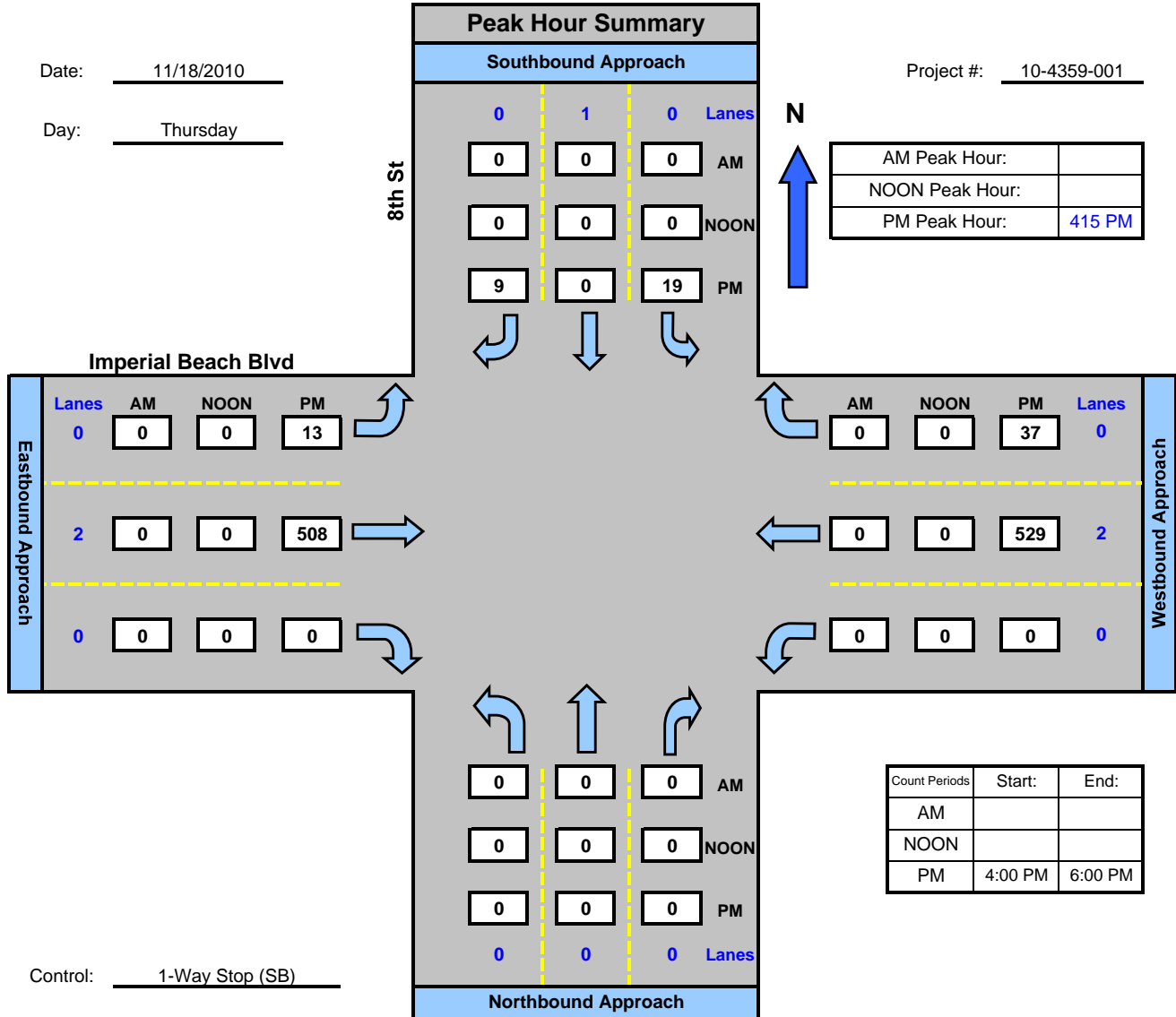
National Data & Surveying Services

8th St and Imperial Beach Blvd.

Date: 11/18/2010

Day: Thursday

Project #: 10-4359-001



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: 9th St

DATE: 11/18/2010

LOCATION: City of Imperial Beach

E-W STREET: Imperial Beach Blvd

DAY: THURSDAY

PROJECT# 10-4359-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 2	NR 0	SL 0	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
4:00 PM	13	18	9	25	25	15	7	87	7	8	92	25	331
4:15 PM	9	24	21	38	17	23	16	88	7	13	112	29	397
4:30 PM	7	17	17	43	23	21	15	115	9	11	115	24	417
4:45 PM	5	9	17	40	16	9	15	120	5	13	117	39	405
5:00 PM	4	18	12	48	23	15	10	122	7	6	129	26	420
5:15 PM	5	10	14	33	19	15	17	114	1	14	102	37	381
5:30 PM	10	11	8	24	25	19	11	102	6	9	103	33	361
5:45 PM	4	10	12	17	20	15	6	79	7	7	99	29	305
TOTAL VOLUMES =	NL 57	NT 117	NR 110	SL 268	ST 168	SR 132	EL 97	ET 827	ER 49	WL 81	WT 869	WR 242	TOTAL 3017

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	25	68	67	169	79	68	56	445	28	43	473	118	1639
PEAK HR. FACTOR:	0.741			0.908			0.945			0.938			0.976

CONTROL: Signalized

Intersection Turning Movement

Prepared by:



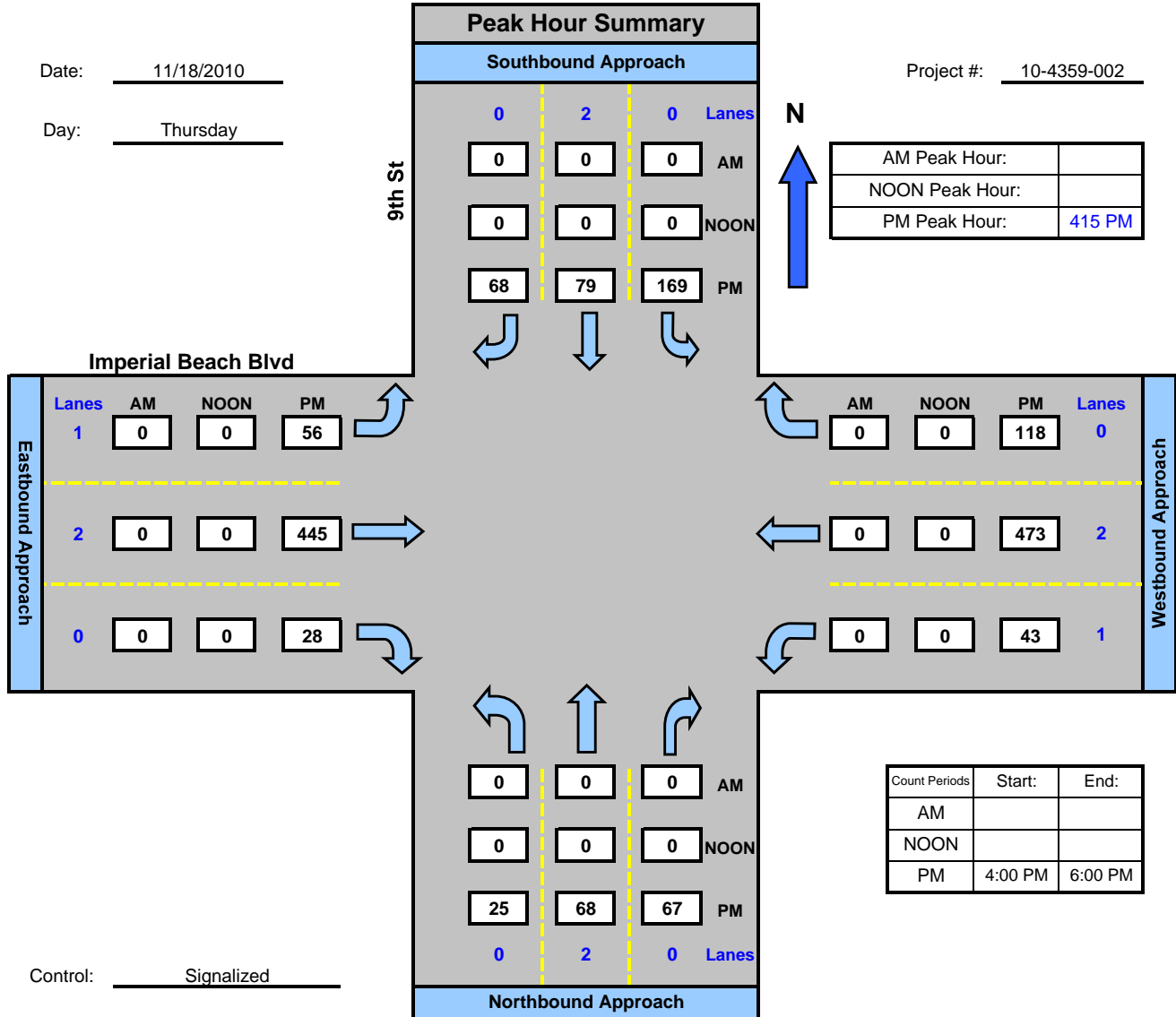
National Data & Surveying Services

9th St and Imperial Beach Blvd.

Date: 11/18/2010

Day: Thursday

Project #: 10-4359-002



Attachment B

Roadway Classifications

PUBLIC ROAD STANDARDS



COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS

March 3, 2010

**PUBLIC ROAD STANDARDS
COUNTY OF SAN DIEGO**

TABLE 1
AVERAGE DAILY VEHICLE TRIPS*

CIRCULATION ELEMENT ROADS		LEVELS OF SERVICE				
Road Classification	# of Travel Lanes	A	B	C	D	E
Expressway (6.1)	6	<36,000	<54,000	<70,000	<86,000	<108,000
Prime Arterial (6.2)	6	<22,200	<37,000	<44,600	<50,000	<57,000
Major Road	(4.1A)	4	<14,800	<24,700	<29,600	<37,000
	w/ Intermittent Turn Lanes (4.1B)	4	<13,700	<22,800	<27,400	<34,200
Collector	4	<13,700	<22,800	<27,400	<30,800	<34,200
Boulevard	w/ Raised Median (4.2A)	4	<18,000	<21,000	<24,000	<30,000
	w/ Intermittent Turn Lanes (4.2B)	4	<16,800	<19,600	<22,500	<25,000
Town Collector	2	<3,000	<6,000	<9,500	<13,500	<19,000
Community Collector	w/ Raised Median (2.1A)	2	<10,000	<11,700	<13,400	<15,000
	w/ Continuous Left Turn Lane (2.1B)	2	<3,000	<6,000	<9,500	<13,500
	w/ Intermittent Turn Lane (2.1C)	2	<3,000	<6,000	<9,500	<13,500
	w/ Passing Lane (2.1D)	2	<3,000	<6,000	<9,500	<13,500
	No Median (2.1E)	2	<1,900	<4,100	<7,100	<10,900
Light Collector	w/ Raised Median (2.2A)	2	<3,000	<6,000	<9,500	<13,500
	w/ Continuous Left Turn Lane (2.2B)	2	<3,000	<6,000	<9,500	<13,500
	w/ Intermittent Turn Lane (2.2C)	2	<3,000	<6,000	<9,500	<13,500
	w/ Passing Lane (2.2D)	2	<3,000	<6,000	<9,500	<13,500
	No Median (2.2E)	2	<1,900	<4,100	<7,100	<10,900
		2	<1,900	<4,100	<7,100	<10,900
	w/ Reduced Shoulder (2.2F)	2	<5,800	<6,800	<7,800	<8,700
Rural Collector	2	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Light Collector	2	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Mountain	2	<1,900	<4,100	<7,100	<10,900	<16,200
Recreational Parkway	2	<1,900	<4,100	<7,100	<10,900	<16,200
Minor Collector	w/ Raised Median (2.3A)	2	<3,000	<6,000	<7,000	<8,000
	w/ Intermittent Turn Lane (2.3B)	2	<3,000	<6,000	<7,000	<8,000
	No Median (2.3C)	2	<1,900	<4,100	<6,000	<7,000
NON-CIRCULATION ELEMENT ROADS**		LEVELS OF SERVICE				
Residential Collector	2	-	-	<4,500	-	-
Rural Residential Collector***	2	-	-	<4,500	-	-
Residential Road	2	-	-	<1,500	-	-
Rural Residential Road***	2	-	-	<1,500	-	-
Residential Cul-de-Sac or Loop Road	2	-	-	<200	-	-

* The values shown are subject to adjustment based on the geometry of the roadway, side frictions, and other relevant factors as determined by the Director, Department of Public Works.

** Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

*** Rural Residential Collectors and Rural Residential Roads are intended to serve areas with lot sizes of 2 acres or more which do not have a demand for on-street parking. On-street parking is not assured for these cross sections. Additional right-of-way is needed if on-street parking is in paved area.

**** See Tables 2A and 2B for roadway surfacing and right-of-way widths.

Attachment C

HCM Worksheets

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 Imperial Beach Library Traffic Impact Analysis
 Existing PM Peak Hour

Impact Analysis Report
 Level Of Service

Intersection	Base Del/ LOS Veh	V/ C	Future Del/ LOS Veh	V/ C	Change in
# 1 Imperial Beach Blvd / 8th St	C 16.9	0.079	C 16.9	0.079	+ 0.000 D/V
# 2 Imperial Beach Blvd / 9th St	C 21.5	0.392	C 21.5	0.392	+ 0.000 D/V

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 Imperial Beach Library Traffic Impact Analysis
 Existing PM Peak Hour

Scenario Report

Scenario: ex pm
 Command: ex pm
 Volume: ex pm
 Geometry: ex
 Impact Fee: Default Impact Fee
 Trip Generation: none
 Trip Distribution: none
 Paths: Default Path
 Routes: Default Route
 Configuration: ex pm

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Imperial Beach Library Traffic Impact Analysis
Existing PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Imperial Beach Blvd / 8th St

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C [16.9]

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled

Rights: Include Include Include Include

Lanes: 0 0 0 0 0 0 1 0 0 1 0 2 0 0 0 0 1 1 0

Volume Module:

Base Vol: 0 0 0 0 0 0 9 13 508 0 0 529 37

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 0 0 0 0 0 9 13 508 0 0 529 37

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 0 0 0 0 0 9 13 508 0 0 529 37

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89

PHF Volume: 0 0 0 0 0 0 10 15 569 0 0 592 41

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 0 0 0 0 0 21 0 15 569 0 0 592 41

Critical Gap Module:

Critical Gap: 6.8 6.5 6.9 4.1 6.8 6.5 6.9 4.1 6.8 6.5 6.9 4.1

FollowUpFm: 3.5 4.0 3.3 2.2 3.5 4.0 3.3 2.2 3.5 4.0 3.3 2.2

Capacity Module:

Conflict Vol: 927 1211 317 634 927 1211 317 634

Potential Cap: 271 184 685 959 271 184 685 959

Move Cap: 268 181 685 959 268 181 685 959

Volume/Cap: 0.08 0.00 0.01 0.02 0.08 0.00 0.01 0.02

Level Of Service Module:

2Way95thQ: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Control Del: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

LOS by Move: A A A A A A A A

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap: 333 333 333 333 333 333 333 333

Shared Queue: 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3

Shrd ConDel: 16.9 16.9 16.9 16.9 16.9 16.9 16.9 16.9

Shared LOS: C C C C C C C C

ApproachDel: 16.9 16.9 16.9 16.9 16.9 16.9 16.9 16.9

ApproachLOS: C C C C C C C C

Note: Queue reported is the number of cars per lane.

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Imperial Beach Library Traffic Impact Analysis
Existing PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Imperial Beach Blvd / 8th St

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C [16.9]

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled

Rights: Include Include Include Include

Lanes: 0 0 0 0 0 0 1 0 0 1 0 2 0 0 0 0 1 1 0

Volume Module:

Base Vol: 0 0 0 0 0 0 9 13 508 0 0 529 37

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 0 0 0 0 0 9 13 508 0 0 529 37

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 0 0 0 0 0 9 13 508 0 0 529 37

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89

PHF Volume: 0 0 0 0 0 0 10 15 569 0 0 592 41

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 0 0 0 0 0 21 0 15 569 0 0 592 41

Critical Gap Module:

Critical Gap: 6.8 6.5 6.9 4.1 6.8 6.5 6.9 4.1

FollowUpFm: 3.5 4.0 3.3 2.2 3.5 4.0 3.3 2.2

Capacity Module:

Conflict Vol: 927 1211 317 634 927 1211 317 634

Potential Cap: 271 184 685 959 271 184 685 959

Move Cap: 268 181 685 959 268 181 685 959

Volume/Cap: 0.08 0.00 0.01 0.02 0.08 0.00 0.01 0.02

Level Of Service Module:

2Way95thQ: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Control Del: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

LOS by Move: A A A A A A A A

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap: 333 333 333 333 333 333 333 333

Shared Queue: 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3

Shrd ConDel: 16.9 16.9 16.9 16.9 16.9 16.9 16.9 16.9

Shared LOS: C C C C C C C C

ApproachDel: 16.9 16.9 16.9 16.9 16.9 16.9 16.9 16.9

ApproachLOS: C C C C C C C C

Note: Queue reported is the number of cars per lane.

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 Imperial Beach Library Traffic Impact Analysis
 Existing Plus Project PM Peak Hour

Impact Analysis Report
 Level Of Service

Intersection	Base Del/ LOS Veh	V/ C	Future Del/ LOS Veh	V/ C	Change in
# 1 Imperial Beach Blvd / 8th St	C 16.9	0.079	C 17.4	0.082	+ 0.450 D/V
# 2 Imperial Beach Blvd / 9th St	C 21.5	0.392	C 21.4	0.397	-0.111 D/V
# 3 Imperial Beach Blvd. / Project	A 0.0	0.000	C 15.7	0.066	+15.723 D/V

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 Imperial Beach Library Traffic Impact Analysis
 Existing Plus Project PM Peak Hour

Scenario Report

Scenario: ex+p pm
 Command: ex+p pm
 Volume: ex+p pm
 Geometry: ex
 Impact Fee: Default Impact Fee
 Trip Generation: pm
 Trip Distribution: Project
 Paths: Default Path
 Routes: Default Route
 Configuration: ex+p pm

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Imperial Beach Library Traffic Impact Analysis
Existing Plus Project PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Imperial Beach Blvd / 8th St

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C [17.4]

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled

Rights: Include Include Include Include

Lanes: 0 0 0 0 0 0 1 0 0 1 0 2 0 0 0 0 1 1 0

Volume Module:

Base Vol: 0 0 0 0 0 0 19 0 9 13 508 0 0 529 37

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 0 0 0 0 0 19 0 9 13 508 0 0 529 37

Added Vol: 0 0 0 0 0 0 0 0 0 0 15 0 0 15 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 0 0 0 0 0 19 0 9 13 523 0 0 544 37

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89

PHF Volume: 0 0 0 0 0 0 21 0 10 15 586 0 0 609 41

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 0 0 0 0 0 21 0 10 15 586 0 0 609 41

Critical Gap Module:

Critical Gap: 6.8 6.5 6.9 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1

FollowUpTm: 3.5 4.0 3.3 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2

Capacity Module:

Conflict Vol: 952 1245 325 651 651 651 651 651 651 651 651 651 651 651

Potential Cap: 261 176 676 945 945 945 945 945 945 945 945 945 945 945

Move Cap: 258 173 676 945 945 945 945 945 945 945 945 945 945 945

Volume/Cap: 0.08 0.00 0.01 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02

Level Of Service Module:

2Way95thQ: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Control Del: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

LOS by Move: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap: 322 322 322 322 322 322 322 322 322 322 322 322 322 322

Shared Queue: 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3

Shrd ConDel: 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4

Shared LOS: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

ApproachDel: 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4

ApproachLOS: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Note: Queue reported is the number of cars per lane.

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Imperial Beach Library Traffic Impact Analysis
Existing Plus Project PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Imperial Beach Blvd / 9th St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.397

Loss Time (sec): 12 Average Delay (sec/veh): 21.4

Optimal Cycle: 36 Level Of Service: C

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Permitted Permitted Permitted

Rights: Include Include Include Include

Min. Green: 7 7 7 7 7 7 7 7 7 7 7 7 7 7

Y+R: 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5

Lanes: 0 1 0 1 0 1 0 1 0 1 0 1 0 1

Volume Module:

Base Vol: 25 68 67 169 79 68 56 445 28 43 473 118

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 25 68 67 169 79 68 56 445 28 43 473 118

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 25 68 67 169 79 68 56 460 28 43 488 118

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98

PHF Volume: 26 69 68 172 81 69 57 469 29 44 498 120

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 26 69 68 172 81 69 57 469 29 44 498 120

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 26 69 68 172 81 69 57 469 29 44 498 120

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adjustment: 0.78 0.78 0.78 0.67 0.67 0.67 0.94 0.94 0.94 0.94 0.94 0.94

Lanes: 0.31 0.85 0.84 1.00 0.54 0.46 1.00 1.89 0.11 1.00 1.61 0.39

Final Sat: 465 1264 1245 1272 684 588 1805 3372 205 1805 2823 683

Capacity Analysis Module:

Vol/Sat: 0.05 0.05 0.05 0.14 0.12 0.12 0.03 0.14 0.14 0.02 0.18 0.18

Crit Moves: 0.34 0.34 0.34 0.34 0.34 0.34 0.08 0.34 0.34 0.19 0.44 0.44

Green/Cycle: 0.16 0.16 0.16 0.40 0.34 0.34 0.40 0.41 0.41 0.13 0.40 0.40

Volume/Cap: 20.7 20.7 20.7 22.9 22.3 22.3 41.1 23.2 23.2 30.6 17.0 17.0

Delay/Veh: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

User DelAdj: 20.7 20.7 20.7 22.9 22.3 22.3 41.1 23.2 23.2 30.6 17.0 17.0

AdjDel/Veh: 20.7 20.7 20.7 22.9 22.3 22.3 41.1 23.2 23.2 30.6 17.0 17.0

LOS by Move: C C C C C C D C C C C C

HCM2kAvgQ: 2 2 2 4 3 3 2 6 6 1 6 6

Note: Queue reported is the number of cars per lane.

Thu Feb 6, 2014 10:54:55

Imperial Beach Library Traffic Impact Analysis
Existing Plus Project PM Peak Hour

Level Of Service Computation Report

```
*****
Intersection #3 Imperial Beach Blvd. / Project Driveway
*****
Average Delay (sec/veh):      0.5   Worst Case Level of Service: C [ 15.7]
*****
```

	North Bound		South Bound		East Bound		West Bound	
	L	T	R	L	T	R	L	T
Approach:								
Movement:								

	Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
		Include	Include	Include	Include
Rights:					

planes:

[illegible]

Initial Bse:	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	15	0	15	15	0	15

[illegible][illegible]

Critical Gap Module:

Critical gp:	xxxxx	6.8	6.9	4.1	xxxx	xxxx	xxxx	xxxx
FollowUpTm:	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxx	xxxx

[illegible]

love Cap.:	xxxx	xxxx	253	170	679	949	xxxx	xxxx	xxxx	xxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.07	0.00	0.02	0.02	xxxx	xxxx	xxxx

```

level Of Service Module:
w2way95thQ:  xxxx xxxx xxxxxx 0.1 xxxx xxxxxx
xxxx xxxx xxxxxx

```

* * * * *

OS by Move: * * * * A * * * *
 LT - LTR - RT LT - LTR - RT LT - LTR - RT

Movement:

[illegible]

Variable	Mean	SD	Min	Max
Adjusted LOS	15.7	15.7	xxxxxx	xxxxxx
approachDel	xxxxxx	xxxxxx	xxxxxx	xxxxxx
approachLOS	xxxxxx	xxxxxx	xxxxxx	xxxxxx

Note: Queue reported is the number of cars per lane.

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